

Application No. 09/843,936  
Reply to Office action of May 5, 2003

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (canceled)
2. (canceled)
3. (canceled)
4. (canceled)
5. (canceled)
6. (canceled)
7. (canceled)
8. (canceled)
9. (canceled)
10. (canceled)
11. (canceled)
12. (canceled)

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13. (canceled)

14. (canceled)

15. (canceled)

16. (canceled)

17. (canceled)

18. (canceled)

19. (canceled)

20. (canceled)

21. (canceled)

22. (canceled)

23. (canceled)

24. (canceled)

25. (canceled)

26. (canceled)

27. (canceled)

28. (canceled)

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29. (canceled)

30. (canceled)

31. (previously presented) A system for the production and storage of hydrogen, said system comprising:

an electrolyzer adapted to be connected to supplies of water and electricity and operable to provide electrolysis of water to generate hydrogen;

a first reactor connected to the electrolyzer to receive hydrogen from the electrolyzer and to react the hydrogen with carbon dioxide to form methanol;

a storage unit connected to the first reactor for storing of said methanol;

a second reactor connected to said storage unit to receive the methanol from the storage unit and to convert the methanol back into hydrogen and carbon dioxide; and

means for recycling the carbon dioxide produced in the second reactor to the first reactor.

32. (canceled)

33. (canceled)

34. (canceled)

35. (previously presented) The system of claim 31, wherein the first reactor is connected to a further source of carbon dioxide in addition to the recycling means.

36. (previously presented) The system of claim 31, further comprising: a generator for receiving the hydrogen from the second reactor and generating electricity using said hydrogen.

37. (previously presented) The system of claim 36, wherein the generator is a fuel cell.

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38. (previously presented) The system of claim 31, wherein the second reactor is a steam reformer.

39. (previously presented) The system of claim 31, further comprising: a second storage unit for storing the carbon dioxide produced in the second reactor.

40. (currently amended) The system of claim 31, further comprising: an internal combustion engine, wherein said second reactor provides hydrogen to ~~an~~ the internal combustion engine.

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**Amendments to the Drawings:**

The attached sheet of drawings includes changes to Figure 2 wherein CO has been changed to CO<sub>2</sub>.

Attachment: Replacement Sheet  
Annotated Sheet Showing Changes

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